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Economic Factor Acting as a Catalyst for the Spreading of Inflation in Pakistan

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Abstract

A redistribution of income may be one of the repercussions of inflation on the economy. As prices increase and savings lose value or purchasing power, it punishes savers. Inflation causes the real worth of fixed-value paper assets like annuities, insurance policies, and savings accounts to decrease. Inflation is generally understood to be a continuous and persistent Increase in the overall price level that reduces buying power. In economics, inflation is defined as an increase in an economy's total price level for goods and services. Each currency unit might purchase less goods and services as the overall price level rises; therefore, inflation is linked with a drop in money's purchasing power. This study aims to examine the impact of the exchange rate, money supply, interest rate and GDP on inflation in Pakistan; this study's nature is quantitative. Secondary date from 1995 to 2022. With the help of E-Views, we use regression method for data analysis. With the help of this study, we can conclude that GDP, exchange rate, interest rate and money supply do not significantly impact inflation in Pakistan. Therefore, our study does not support any of the four tested hypotheses.

Key Words: Exchange Rate; GDP; Interest rate; Money Supply

Introduction

A redistribution of income may be one of the repercussions of inflation on the economy (M. A. Khan et al., 2022). As prices increase and savings lose value or purchasing power, it punishes savers (Fayaz Ahmad & Khalil Shahid, 2015). Inflation causes the real worth of fixed-value paper assets like annuities, insurance policies, and savings accounts to decrease (Ibrahim et al., 2005). Unexpected inflation is advantageous to debtors while being costly to creditors. Lower inflation rates are needed for management of macroeconomics, specially in developing countires. Many negative effects on the economy might result from inflation (Obaid et al., 2022). First, inflation reduces purchasing power of people, slowing economic growth. As a result of the numerous uncertainties brought on by an inflationary climate, macroeconomic instability rises. Second, the effects of inflation on poverty are regressive (Irshad, Hussain, Muhammad Fahim, et al., 2022). The world's most diverse region is the Asian continent, which is also home to some of the least developed countries, such as Afghanistan, Nepal, Bhutand and Bangladesh, as well as one of the most developed countries like Japan (Akhter, 2023). This region also includes the recently industrialized nations and the growing economies in transition (Lee, 2022). Most Asian emerging nations have seen high and rapid economic growth over the past one to two decades, which has led to moderate to high inflation. Hence, inflation has emerged as a significant issue for rising economies (Abbassi et al., 2022).

There are two approaches to explain how inflation dynamics work (Tarighi et al., 2022). According to one school of thought, supply shocks and other non-monetary factors significantly impact inflation. It has long been believed that income distribution will go from relative equality to inequality and then back to more equality as a nation develops (Prabhawa & Harymawan, 2022). It makes sense that inequality would increase when some people switched from the prevalent traditional activities with a low marginal product to more productive endeavours (A. M. Khan et al., 2022). The marginal products of all economic activity eventually converge, and the income gap closes (Ibrahim et al., 2014). With time, a widespread belief that moderate inflation promotes economic growth as opposed to excessive price levels that can breed uncertainty and impair economic performance emerged (N. Khan et al., 2012). This consensus raises the issue of how much inflation is too much or how much inflation hampers economic growth. There is a tone of research on this subject, even though work on modelling the nature of the connection between inflation and economic development is still progressing (Irshad et al., 2023). This subject is covered in several research for both industrialized and developing nations. A country's current economic situation determines its future (Waqas Balooch et al., 2015). Every country's economy is underpinned by several factors for its survival and growth: foreign direct investment, inflation, trade, exports, and tax revenue.

Literature Review

Inflation

economists from across the globe, inflation is generally understood to be a continuous and persistent increase in the overall price level that reduces buying power (Ahmad et al., 2022). In economics, inflation is defined as an increase in overall price level for goods and services in an economy (Nobanee & Ellili, 2022). Each currency unit might purchase less goods and services due to the rise in overall price level; therefore, inflation is related with a decrease in money's purchasing power (Boll et al., 2022). The opposite of inflation is deflation, which is a decline in the general level of prices for goods and services (Canbaloglu et al., 2022). The most widely used measure of inflation is the annualised percentage change in an index of general prices (Ahmad et al., 2021). Because of inflation, rising product prices result in higher daily living expenses and lower savings levels (Aziz & Hussain, 2021). Investments decline as a result, disrupting the economic structure of any nation (Fayaz Ahmad et al., 2021). In a scenario, inflation becomes a measurable phenomenon that draws the attention of scholars, economists, and decision-makers (Diantimala et al., 2022). Most economists agree that persistently extreme increase in the money supply is the main factor of high inflation, which profoundly disrupt the actual economy (Biswas et al., 2022). Several empirical studies have been conducted to pinpoint the potential causes of inflation based on various methodologies and time frames (Zalata et al., 2022). The parameters that have continually been taken into the currency rate, money supply, inflation anticipation, interest rate, imported inflation, and gross domestic product (GDP), are the reasons that have been used by scholars for explaining inflation. The money supply significantly influences inflation (Buallay & Alhalwachi, 2022).

Exchange Rate

In the world of finance, an exchange rate is the cost at which one currency will be exchanged for another (Healy & Wahlen, 1999). The majority of the time, currencies are national, but occasionally they can also be supra-national (like the euro) or sub-national (like Hong Kong) (Ghazali et al., 2015). A country's currency value relative to another is also the exchange rate. Determined a central bank with a stabilization mission CPI could increase interest rates to reduce the impact of inflation on the exchange rate from wear and tear . Additionally, changes in import costs impacted the exchange rate between the Chinese Rimini and the US Dollar. The exchange rate and inflation rate (Irshad, Hussain, & Baig, 2022)are negatively correlated. The inflation rate is adversely affected by the currency rate. Using time series data, he examined the variables influencing inflation in Nigeria. Exchange rates affect consumption by passing through inflationary impacts (Andriamahery & Qamruzzaman, 2022). In other words, currency rate and inflation uncertainty are linked, impacting consumer choices (Tulcanaza-Prieto & Lee, 2022). The demand for complete inflation rises as the money supply rises. That exchange rate influenced the increase in inflation. The currency rate is one of the most significant measures of a nation's economic growth and its instability has a significant impact on global trade (Jensen & Meckling, 1976).

Interest Rate

The conversion rate, as said, the nominal interest rate, positively influences inflation (Nuss et al., 2016). The nominal interest rate has a negligible impact on inflation. The economy suffers due to increased interest rates since they limit capital outflows, which impedes economic growth. Discrepancies in projected inflation that are fix in the nominal interest rate have an influence on the exchange rate (Fan et al., 2017; Kumar et al., 2018). The interest rate is described by Bank Indonesia (BI) as a tool that is decided upon at the Board of Governors meeting once every three months (quarterly) (Macdonald et al., 2018). The interest rate serves as a benchmark for monetary policy, with banks maintaining the typical 1- month SBI s At the level the auction results should be on the open market (Ibrahim et al., 2008). This ensures that bank colleagues influence each other's interest rates equally over time. Her SBI at one month will be determined on an ongoing and step-by-step basis (Shojaei & Haeri, 2019).

In setting the interest rate, the governor had two things in mind for him. First, the policy response function uses economic models to adjust the recommended interest rate to achieve the target inflation rate

(Behzadi et al., 2018). Second, the collection of useful economic information such as economic research results, expert opinions, economic surveys, and macroeconomic indicators. Central banks used interest rates to control inflation (Mehrdokht Pournader, Kristian Rotaru, Andrew, Philip, Kach Seyed, Hossein, 2016). If inflation rose, Bank Indonesia acted by raising interest rates in hopes of lowering inflation . Changes in interest rates affect financial and capital markets. If interest rates rise, interest expenses will increase. This has a big impact on companies with high averages. In addition, the stock price is also affected as this rise can reduce the company's profitability (Ahmad et al., 2022). On the other hand, interest rates are considered bank rates or monetary policy rates (MPR). They are one of the intermediate monetary policy instruments under the control of central bank, controlling the supply of money and, thus, the inflation rate (Moktadir et al., 2018).

Money Supply

Money supply in macroeconomics refers to the total amount of currency held by the public at any particular time (Zhao, 2022). Money can be defined in numerous ways, but standard procedures regularly comprise circulation of currency and demand deposits (Khattak et al., 2022). First, the total amount of money in circulation in a nation at any particular time is known as the money supply (Akonkwa et al., 2022). The total money supply is broadly divided into two categories. These are near money (M1) and broad money (M2). M1 represents cash in circulation plus commercial bank checking accounts, and M2 is M1 plus term deposits and savings. The US Federal Reserve has full control over the global money supply, increasing and decreasing the money supply through open markets (Ho et al., 2015). Central bank policy determines the money supply and controls the money supply between money-holding households and banks (Kilubi & Rogers, 2018). Forms of money circulating within communities include foreign currency and deposits from household transactions with existing banks. Statements that central banks cannot control the supply of money tend to elicit blank and incredulous views from American economists (Scheibe & Blackhurst, 2018).

Gross Domestic Product (GDP)

GDP is determined annually and is sometimes called annual GDP (Aldamen & Duncan, 2013). The total worth of a nation's finished goods and services, valued at current market rates, is known as annual GDP. Gross Domestic Product (also abbreviated as GDP) is one of the most important tools economists use to measure or measure the level of output or the strength of an economy (Asghar et al., 2022). The current market worth of all the commodities and services a nation produces over a certain time period is reflected in its gross domestic product. Numerous studies have been conducted on the connection between inflation and GDP exchange rates. Almost all countries show that exchange rates positively impact GDP, while inflation has a small impact. GDP is the most useful indicator (Ahmad et al., 2023).

There are several approaches to looking at GDP, but the most common are the two approaches: expenditure-based and income-based (Ahmad et al., 2022). First, let's talk about expense-based processes. The expenditure-based practice considers all goods and services in a particular year for which you want to determine GDP (Ali et al., 2022). The best example of this approach is buying commodities and services for foreign investors (Sikandar et al., 2022). The second approach is the income-based approach (Irshad et al., 2021). This approach is best defined as the remuneration of all workers, the income of each firm, rent, taxes on goods produced, interest rates, and import levels. Sustainable economic growth is a major goal in 2011 (Liu et al., 2022). Therefore, inflation has been considered one of the most studied topics in macroeconomics fo years, as it profoundly affects growth and income distribution. However, the connection between inflation and growth relies on the state of the economy (Faheem et al., 2021). High growth is probable without increasing inflation if the economy's possible output produces enough to keep up with demand. Increased price volatility is always associated with high inflation, which can make it difficult to predict whether future investment initiatives will be profitable. As a result, investors make more cautious investing selections (Irshad, Khan, Akhlaq, et al., 2022). This ultimately leads to lower investment and economic growth.

Hypothesis

H1: Gross Domestic Product (GDP) significantly impacts inflation.

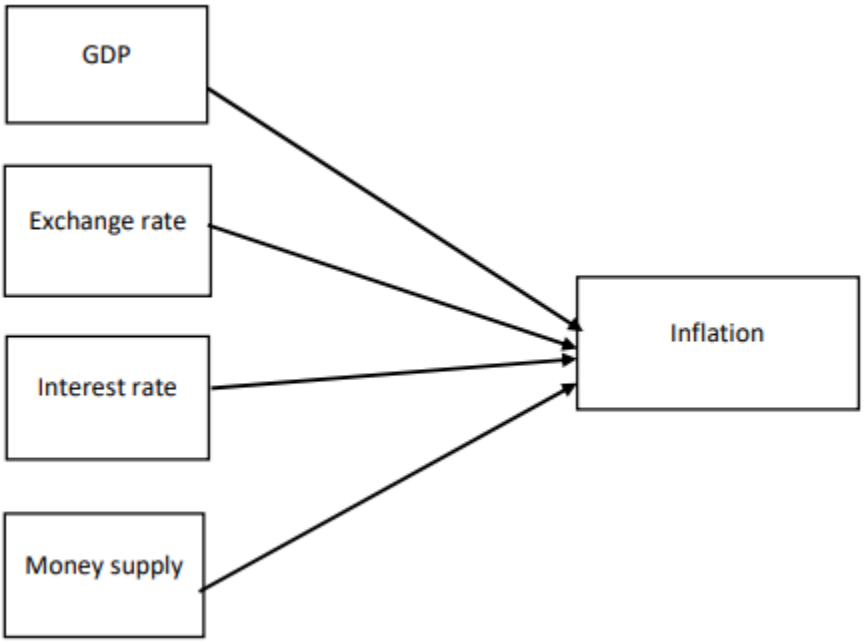
H2: The exchange rate significantly effects inflation.

H3: Interest rates significantly impact inflation.

H4: Money Supply significantly impacts inflation.

Conceptual Framework

Below is the conceptual framework for this study, derived through a t review of the literature.



Material And Methods

This study was based solely on secondary data. Literature data were gathered from different journals, books, articles, papers, journals and electronic sources to improve the quality of the secondary data. Data for statistical analysis was obtained from the World Bank website. Interest rates, exchange rates, money supply and GDP, are independent variables, and inflation is the dependent variable. This study's sample size for data analysis is based on 48 years, from 1975 to 2023. The statistical method used to analyze the data was ordinary least squares regression. The software used for this was E-Views.

Result And Discussion

Data Stationary Test

The Augmented Dickey-Fuller (ADF) test's result for 1's root of five economic variables. Inflation (INF), Exchange Rate (RA), Interest Rate (IR), Money Supply (MS), and Gross Domestic Product (GDP). The ADF test is used for the unit root's existence in time series data, indicating that the data are nonstationary and trendy. The outcomes of the test are described in the second and third columns of the table, displaying the test statistic and corresponding p-value, respectively. The ADF test's result shows that the three variables statistically significantly reject the null hypothesis of the root of 1 at the 1% level.

Inflation (INF), Money Supply (MS), and Gross Domestic Product (GDP). This means these variables are stationary and have no trend, exhibiting more stable behavior over time. The interest rate (IR) t-statistic is -2.68097, but its p-value surpasses the 5% significance level. Therefore, the null hypothesis of IR cannot be rejected. The ADF statistic for the exchange rate (ER) is positive, not stationary, and its p-value is higher than the 10% significance level, so null hypothesis cannot be rejected. Therefore, we show that ER has a unit root, is nonstationary, and tends. The last three rows of the table contain the critical values for the ADF test at the 15% and 10% significance level. For deciding whether to reject the null hypothesis, these values are used. If the test statistic's absolute value is higher than the critical value, the null hypothesis is rejected, and the variable is considered stationary. Otherwise, the null hypothesis cannot be rejected, and the variable is considered nonstationary. The results suggest that the INF, MS and GDP variables are stationary, whereas the IR and ER are non-stationary and trendy. Stationarity of these variables is important for time series analysis as it ensures stable behavior of the data over time and facilitates modelling and forecasting.

Multi Co-Linearity Test

Multicollinear Variance Inflation Factor (VIF) test results. VIF measures how much the variance of the regression model's estimated coefficients increases as the independent variables are correlated. The spreadsheet has four independent variables. ER, INF, IR, MS, and constant term C. The VIF for each variable is tabulated along with the non-central and central variances. The VIF values show that the model has no evidence of significant multicollinearity. Generally, a VIF score of 10 or higher indicates high multicollinearity and a score of 5 or lower is considered acceptable. In this case, VIF values are well below 5, and the GDP high is still relatively low at 7.78. Therefore, based on the VIF test, we can make the conclusion that the independent variables in the model are not strongly correlated, and multicollinearity is unlikely to be a significant expense problem in regression analysis.

Results of the heteroskedasticity test using the BP-Godfrey test. The null hypothesis states that the data are not heteroscedastic.

The F-statistic for the test is 1.071032, and the corresponding probability value is 0.3836. This indicates we cannot reject the null hypothesis of no heteroscedasticity at the 5% significance level. The test also returns an Obs* R-squared value (4.353382) with a corresponding probability value of 0.3603 using the 4 degrees of the freedom chi-square distribution. Again, this suggests we do not reject the lack of heteroscedasticity null hypothesis. However, the table also shows a scaled explanatory sum of squares of 14.6926, with a corresponding probability value of 0.0054 using a chi-square distribution with 4 degrees of freedom. This suggests we reject the null hypothesis of no heteroscedasticity at the 1% significance level. The table also demonstrations the result of a regression analysis where the dependent variable is the squared residual (RESID^2), and the independent variables are C (constant), IR, INF, BIP, and ER. The coefficients of the independent variables are estimated using the least squares method. S The adjusted R-squared value is 0.006416, indicating that the independent variables explain little variation in the squared residuals. The Durbin-Watson statistic is 2.55498, indicating that the residuals have no significant autocorrelation. The regressions's F-statistic is 1.071032, and the equivalent probability value is 0.38355, demonstrating that the complete model is not statistically significant at the 5% significance level.

Autocorrelation Test

The Breusch-Godfrey Serial Correlation LM test was used to test for cheking a regression model's autocorrelation. Autocorrelation happens when a regression model's error terms are correlated, violating one of the assumptions of linear regression. This test regresses the residuals from the original regression model on the lagged values of the residuals and tests whether the lagged residuals' coefficients are significantly dissimilar from zero. The test output contains two statistics: Obs*R squared statistic and F statistic. The F statistic tests the null hypothesis that the residuals are not autocorrelated. In the output, the F-statistic is 0.773081, and the associated p-value (probability F(2.38)) is 0.4687. The p-value is greater than 0.05, so we cannot reject the null hypothesis of no autocorrelation. This indicates that there is no

indication of significant autocorrelation in the residuals. The Obs*R squared statistic is another test of the null hypothesis of no autocorrelation. It is computed by multiplying the r-squared regression of lagged residuals by the number of observations in the model. The Obs*R-squared statistic is 1.759394 in the output, and the associated p-value (Prob. Chi-Squared(2)) is 0.4149. Again, the p-value is greater than 0.05, so we cannot reject the null hypothesis of no autocorrelation. Overall, the results of the Breusch-Godfrey serial correlation LM test indicate that the residuals of the regression model lack significant autocorrelation.

Regression Model

This regression model aims to analyze the relationship between the inflation rate (INF) and four independent variables i.e. Interest rate (IR), Exchange rate (ER), money supply (MS) and gross domestic product (GDP). Coefficients of independent variables are tabulated with standard errors, t-statistics, and corresponding probabilities. The intercept coefficient (C) is 10.29241, but its t-statistic is only 0.364526, which is insignificant at the 5% level (probability = 0.7174). None of the independent variable coefficients is statistically significant at the 5% level because all p-values are greater than 0.05. This indicates no strong linear connection between INF and the independent variables. The R-squared value of 0.030347 shows that the model explains only about 3% of the variance in INF, which is very low. The fitted R-squared value is negative, indicating that the model may not fit the data well. The F-statistic of 0.312972 also suggests that the model is insignificant; overall, the p-value (0.867611) is greater than 0.05. His 2.121727 for the Durbin-Watson statistic suggests no significant autocorrelation in the residuals, which is a good sign. In summary, this regression model does not provide significant evidence that a strong linear relationship exists between INF and the independent variables.

Table 1 Dependent Variable:INF

Method: Least Squares				
Sample: 1975 2022				
Included observations: 45				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	10.2924	28.2351	0.36453	0.7174
ER	-0.0158	0.06723	-0.2352	0.8153
IR	-0.1005	0.86421	-0.1162	0.908
GDP	-6.8412	12.6306	-0.5416	0.5911
MS	2.37092	5.37813	0.44085	0.6617
R-squared	0.03035	Akaike info criterion		7.670136
Adjusted R-squared	-0.0666	Durbin-Watson stat		2.121727
F-statistic	0.31297	Prob(F-statistic)		0.867611

Model Specification

This output represents the results of the Ramsey RESET test used to check for absent variable biases in the regression model. The null hypothesis is not ommitted variable bias, and the alternative hypothesis is that there is an omitted variable bias. The model tested is called 'UNTITLED' and contains

the following independent variables: Inflation (INF), Real Consumption Expenditure (C), Exchange Rate (ER), Gross Domestic Product (GDP), Interest Rates (IR), and Money Supply (MS). We examined model fit by using the Ramsey RESET test to test whether including squared values of the fit improves model fit. The test statistic shows a p-value of 0.7653 for the t-statistic, indicating no evidence of omitted variable bias at the 5% significance level.

Similarly, the p-value for the F-statistic is 0.7653, indicating no evidence of omitted variable bias in the model. The likelihood ratio test is also used to test the null hypothesis that there is no bias due to omitted variables. The p-value for this test is 0.7469, which is above the 5% significance level. Hence, we cannot reject the null hypothesis and determine there is no evidence of omitted variable bias in the model. Finally, the F-test summary shows the sums of squares for the Ramsey RESET test with a test sum of squares (SSR) of 10.45238 and the model restricted and unconstrained sums of squares. The unconstrained sum of squares (4511.5) is slightly smaller than the constrained sum of squares (4521.952), further supporting the conclusion that the model is free of variable omission bias.

Pair-Wise Granger Causality Test

The pairwise Granger causality test is a test used for determining that one time series can predict another or not. In this test, the null hypothesis is that the first series was not Granger who caused his second series. If the p-value is less than the chosen significance level (often 0.05), the null hypothesis is rejected, as well as it is decided that the first time series is Granger causing his second time series. Four-time series are analyzed in this particular test. INF (Inflation), ER (Exchange Rate), IR (Interest Rate), MS (Money Supply) and GDP (Gross Domestic Product). The test is conducted with a sample period from 1975 to 2022 and a lag of 2. The results show that no time series exhibit Granger causality with a p-value below the 0.05 significance level. Therefore, we cannot conclude that one time series can predict or cause any other time series. It is essential to note that these results bases on the specific sampling period and lag chosen and may not apply to other sampling periods or lags.

Hypothesis Testing Table

This table shows four hypotheses in our research study, but our results do not support any hypotheses. Money supply, exchange rate, interest rate and GDP have no significant impact on inflation in Pakistan.

Table 2 Hypothesis Testing Table

Hypothesizes	Results
H1: There is a significant impact of GDP on inflation	Not supported
H2: There is a significant impact of exchange rate on inflation	Not supported
H3: There is a significant impact of interest rate on the inflation	Not supported
H4: There is a significant impact of money supply on inflation	Not supported

Conclusion And Recommendations

Based on our findings, we can conclude that GDP, exchange rate, interest rate and money supply do not significantly impact inflation in Pakistan. Therefore, our study does not support any of the four tested hypotheses. Overall, the results of this study suggest that for a policymaker to control inflation, he should not focus only on one variable (such as interest rates or the money supply) but on the many different factors that can contribute to inflation. This suggests that a more comprehensive approach considering the

Contribute to Pakistan should be taken. Regarding recommendations, Pakistani policymakers should consider other factors contributing to inflation, such as B. Changes in supply and demand for goods and services, fluctuations in international commodity prices, and political instability. Additionally, further research can be conducted to explore the relationship between inflation in Pakistan and other economic variables.

References

Abbassi, W., Boubaker, S., & Louhichi, W. (2022). Why do corporate social responsibility-oriented companies opt for bond debt? Evidence from crisis periods. *International Journal of Finance & Economics*. https://doi.org/10.1002/ijfe.2741

Ahmad, S. F., Alam, M. M., Rahmat, Mohd. K., Mubarik, M. S., & Hyder, S. I. (2022). Academic and Administrative Role of Artificial Intelligence in Education. *Sustainability*, *14*(3), 1101. https://doi.org/10.3390/su14031101

Ahmad, S. F., Alam, M. M., Rahmat, Mohd. K., Shahid, M. K., Aslam, M., Salim, N. A., & Al-Abyadh, M. H. A. (2023). Leading Edge or Bleeding Edge: Designing a Framework for the Adoption of AI Technology in an Educational Organization. *Sustainability*, *15*(8), 6540. https://doi.org/10.3390/su15086540

Ahmad, S. F., Rahmat, Mohd. K., Mubarik, M. S., Alam, M. M., & Hyder, S. I. (2021). Artificial Intelligence and Its Role in Education. *Sustainability*, *13*(22), 12902. https://doi.org/10.3390/su132212902

Akhter, N. (2023). Determinants of commercial bank's non-performing loans in Bangladesh: An empirical evidence. *Cogent Economics & Finance*, *11*(1). https://doi.org/10.1080/23322039.2023.2194128

Akonkwa, D. B. M., Lunanga, E., Mukulu, J. B., Bugandwa, T. C., & Mwaza, E. F. (2022). Leadership Styles and Small Enterprises' Performance: Is Gender an Issue? Empirical Study from Democratic Republic of Congo. *Journal of Entrepreneurship and Innovation in Emerging Economies*, *8*(1), 60–82. https://doi.org/10.1177/23939575211044318

Aldamen, H., & Duncan, K. (2013). Pricing of innate and discretionary accruals in Australian debt. *Accounting & Finance*, *53*(1), 31–53. https://doi.org/10.1111/j.1467-629X.2011.00458.x

Ali, M., Qureshi, A. M., & Irshad, M. (2022). A Systematic Review on Supply Chain Risk Management: Issues, Challenges, and Future Agenda. *PAKISTAN LANGUAGES AND HUMANITIES REVIEW*, *6*(II). https://doi.org/10.47205/plhr.2022(6-ii)14

Andriamahery, A., & Qamruzzaman, Md. (2022). Do Access to Finance, Technical Know-How, and Financial Literacy Offer Women Empowerment Through Women's Entrepreneurial Development? *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.776844

Asghar, M. M., Zaidi, S. A. H., Ahmed, Z., Khalid, S., Murshed, M., Mahmood, H., & Abbas, S. (2022). The role of environmental transformational leadership in employees' influencing organizational citizenship behavior for environment well-being: a survey data analysis. *Environmental Science and Pollution Research*, *29*(39), 58773–58790. https://doi.org/10.1007/s11356-022-19886-5

Aziz, A., & Hussain, M. J. (2021). Barriers in Implementing TQM in Secondary Schools: A comparison between privately-owned and government-owned schools of Pakistan. *Journal of Contemporary Issues in Business and Government*, *27*(5), 294–307. https://doi.org/10.47750/cibg.2021.27.05.019

Behzadi, G., O'Sullivan, M. J., Olsen, T. L., & Zhang, A. (2018). Agribusiness supply chain risk management: A review of quantitative decision models. *Omega (United Kingdom)*, *79*, 21–42. https://doi.org/10.1016/j.omega.2017.07.005

Biswas, S., Bhattacharya, M., Sadarangani, P. H., & Jin, J. Y. (2022). Corporate governance and earnings management in banks: An empirical evidence from India. *Cogent Economics & Finance*, *10*(1). https://doi.org/10.1080/23322039.2022.2085266

Boll, D., Müller, H., & Sidki, M. (2022). Determining the drivers of earnings management among municipal enterprises: Evidence from Germany. *Public Money & Management*, *42*(7), 501–510. https://doi.org/10.1080/09540962.2022.2076515

Buallay, A., & Alhalwachi, L. (2022). Board gender diversity and environmental disclosure: evidence from the banking sector. *Journal of Chinese Economic and Foreign Trade Studies*, *15*(3), 350–371. https://doi.org/10.1108/JCEFTS-08-2021-0046

Canbaloglu, B., Alp, O. S., & Gurgun, G. (2022). Debt maturity structure and stock price crash risk: The case of Turkiye. *Borsa Istanbul Review*, *22*(5), 985–991. https://doi.org/10.1016/j.bir.2022.07.005

Diantimala, Y., Syahnur, S., & Islahuddin, I. (2022). Recursive correlation between voluntary disclosure, cost of capital, information asymmetry, and firm value. *Cogent Business & Management*, *9*(1). https://doi.org/10.1080/23311975.2022.2154489

Faheem, M., Hussain, M., Rehman, A., & Irshad, M. (2021). Effect of Multisensory Branding on Purchase Intention at Cafes in Pakistan. In *KASBIT Business Journal* (Vol. 14, Issue 3).

Fan, H., Li, G., Sun, H., & Cheng, T. C. E. (2017). An information processing perspective on supply chain risk management: Antecedents, mechanism, and consequences. *International Journal of Production Economics*, *4*(1), 63–75. https://doi.org/10.1016/j.ijpe.2016.11.015

Fayaz Ahmad, S., Ibrahim, M., & Hussain Nadeem, A. (2021). IMPACT OF ETHICS, STRESS AND TRUST ON CHANGE MANAGEMENT IN PUBLIC SECTOR ORGANIZATION. *Gomal University Journal of Research*, *37*(01), 43–54. https://doi.org/10.51380/gujr-37-01-05

Fayaz Ahmad, S., & Khalil Shahid, M. (2015). *Information and Knowledge Management Impact of Knowledge Management on Security of Information and its Strategic Outcomes*. *5*(1). www.iiste.org

Ghazali, A. W., Shafie, N. A., & Sanusi, Z. M. (2015). Earnings Management: An Analysis of Opportunistic Behaviour, Monitoring Mechanism and Financial Distress. *Procedia Economics and Finance*, *28*, 190–201. https://doi.org/10.1016/S2212-5671(15)01100-4

Healy, P. M., & Wahlen, J. M. (1999). A Review of the Earnings Management Literature and Its Implications for Standard Setting. *Accounting Horizons*, *13*(4), 365–383. https://doi.org/10.2308/acch.1999.13.4.365

Ho, W., Zheng, T., Yildiz, H., & Talluri, S. (2015). Supply chain risk management: A literature review. *International Journal of Production Research*, *53*(16), 5031–5069. https://doi.org/10.1080/00207543.2015.1030467

Ibrahim, M., Khalil Shahid, M., & Fayaz Ahmad, S. (n.d.). *The Impact of Innovati ons on Adoption of Mobile Banking In Pakistan Special Issue "Sustainable Approaches for Plant Conservation under Emerging Pollutants Volume II" Sustainability (Impact Factor = 3.889) View project Development and Simulation of Next Generation SDH Network Management System View project*. https://www.researchgate.net/publication/325069943

Ibrahim, M., Shahid, M. K., & Ahmed, S. F. (2014). The Impact of Telecom Services Characteristics on Consumer for Use in Pakistan. *Advances in Economics and Business*, *2*(4), 172–179. https://doi.org/10.13189/aeb.2014.020403

Irshad, M., Arif, M., & Hussain, M. (2021). The Effects of verbal and nonverbal Ostracism on employee interpersonal work behavior. *Journal of Contemporary Issues in Business and Government*, *27*(5), 2021. https://doi.org/10.47750/cibg.2021.27.05.036

Irshad, M., Hussain, M., & Baig, A. M. (2022). Macroeconomic Variables the Indicators for the Economic Growth of Pakistan. *Pakistan Social Sciences Review*, *6*(II). https://doi.org/10.35484/pssr.2022(6-ii)06

Irshad, M., Hussain, M., Muhammad Fahim, S., & Ghias, S. (2022). Factors Affecting Customer Satisfaction: A Case Study of Food Panda. In *Reviews of Management Sciences* (Vol. 4, Issue 1).

Irshad, M., Khan, M. A., Akhlaq, A., & Hussain, M. (2022). Strategies to Deregulate the Downstream Petroleum Sector of Pakistan. *Journal of Economic Impact*, *4*(1), 122–131. https://doi.org/10.52223/jei4012214

Irshad, M., Qureshi, M. A., Saraih, U. N., & Ahmad, S. F. (2023). Impact of institutional climate on the student's engagement and learning outcomes in private sector universities of Karachi. *International Journal of Management in Education*, *17*(3), 297. https://doi.org/10.1504/IJMIE.2023.130674

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X

Khan, A. M., Ahmad, F. S., & Irshad, M. (2022). Quantifying the Mediating Effect of Resilience in Supply Chain: Empirical Evidence from Oil and Lubricant Industry. *Journal of Development and Social Sciences*, *3*(II). https://doi.org/10.47205/jdss.2022(3-II)21

Khan, M. A., Ahmed, N., & Irshad, M. (2022). Effect of Uncertainty, Supplier Involvement, Supplier Performance and Partnership Quality on Buyer-Supplier Relationship. *Market Forces*, *17*(1), 41–58. https://doi.org/10.51153/mf.v17i1.537

Khan, N., Fayaz Ahmed, S., Ibrahim, M., & Khalil Shahid, M. (2012). Impact of On-Job Training on Performance of Telecommunication Industry. In *Journal of Social and Development Sciences* (Vol. 3, Issue 2).

Khattak, S. I., Rizvi, T. H., & Khan, M. A. (2022). Unwrapping Software Projects Success in Asia: Assessing the Role Of Authentic Leadership, Psychological Empowerment, and Job Engagement in Project Success Using a Serial-Mediation Approach. *SAGE Open*, *12*(2), 215824402210979. https://doi.org/10.1177/21582440221097918

Kilubi, I., & Rogers, H. (2018). Bridging the gap between supply chain risk management and strategic technology partnering capabilities: insights from social capital theory. *Supply Chain Management*, *23*(4), 278–292. https://doi.org/10.1108/SCM-02-2017-0091

Kumar, V., Bak, O., Guo, R., Shaw, S. L., Colicchia, C., Garza-Reyes, J. A., & Kumari, A. (2018). An empirical analysis of supply and manufacturing risk and business performance: a Chinese manufacturing supply chain perspective. *Supply Chain Management*, *23*(6), 461–479. https://doi.org/10.1108/SCM-10-2017-0319

Lee, J. (2022). Voluntary Disclosure of Carbon Emissions Information, Managerial Ability, and Credit Ratings. *Sustainability*, *14*(12), 7504. https://doi.org/10.3390/su14127504

Liu, X., Ahmad, S. F., Anser, M. K., Ke, J., Irshad, M., Ul-Haq, J., & Abbas, S. (2022). Cyber security threats: A never-ending challenge for e-commerce. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.927398

Macdonald, J. R., Zobel, C. W., Melnyk, S. A., & Griffis, S. E. (2018). Supply chain risk and resilience: theory building through structured experiments and simulation. *International Journal of Production Research*, *56*(12), 4337–4355. https://doi.org/10.1080/00207543.2017.1421787

Mehrdokht Pournader, Kristian Rotaru, Andrew, Philip, Kach Seyed, Hossein, R. H. (2016). 36- Supply Chain Management : An International Journal Article information : An analytical model for system-wide and tier-specific assessment of resilience to supply chain risks Abstract. *An International Journal*, *21*(5), 1–53.

Moktadir, M. A., Ali, S. M., Mangla, S. K., Sharmy, T. A., Luthra, S., Mishra, N., & Garza-Reyes, J. A. (2018). Decision modeling of risks in pharmaceutical supply chains. *Industrial Management and Data Systems*, *118*(7), 1388–1412. https://doi.org/10.1108/IMDS-10-2017-0465

Nobanee, H., & Ellili, N. O. D. (2022). Does risk disclosure reporting quality reduce credit risk of GCC conventional and Islamic banks? *Journal of Sustainable Finance & Investment*, 1–26. https://doi.org/10.1080/20430795.2022.2124835

Nuss, P., Graedel, T. E., Alonso, E., & Carroll, A. (2016). Mapping supply chain risk by network analysis of product platforms. *Sustainable Materials and Technologies*, *10*, 14–22. https://doi.org/10.1016/j.susmat.2016.10.002

Obaid, S., Ahmad, S. F., & Mumtaz, F. (2022). Ability-Motivation-Opportunity Framework. *International Journal of Asian Business and Information Management*, *13*(1), 1–26. https://doi.org/10.4018/IJABIM.309105

Prabhawa, A. A., & Harymawan, I. (2022). Readability of Financial Footnotes, Audit Fees, and Risk Management Committee. *Risks*, *10*(9), 170. https://doi.org/10.3390/risks10090170

Scheibe, K. P., & Blackhurst, J. (2018). Supply chain disruption propagation: a systemic risk and normal accident theory perspective. *International Journal of Production Research*, *56*(1–2), 43–59. https://doi.org/10.1080/00207543.2017.1355123

Shojaei, P., & Haeri, S. A. S. (2019). Development of supply chain risk management approaches for construction projects: A grounded theory approach. *Computers and Industrial Engineering*, *128*, 837–850. https://doi.org/10.1016/j.cie.2018.11.045

Sikandar, P., Karachi, P., & Irshad, M. (2022). Feeling Black & Blue yet at Work: Physical Job Stressors and Sickness Presenteeism with the Moderation of Organizational Justice. *Sustainable Business and Society in Emerging Economies*, *4*(1). www.publishing.globalcsrc.org/sbsee

Tarighi, H., Appolloni, A., Shirzad, A., & Azad, A. (2022). Corporate Social Responsibility Disclosure (CSRD) and Financial Distressed Risk (FDR): Does Institutional Ownership Matter? *Sustainability*, *14*(2), 742. https://doi.org/10.3390/su14020742

Tulcanaza-Prieto, A. B., & Lee, Y. (2022). Real Earnings Management, Firm Value, and Corporate Governance: Evidence from the Korean Market. *International Journal of Financial Studies*, *10*(1), 19. https://doi.org/10.3390/ijfs10010019

Waqas Balooch, M., Abbas, K., Ibrahim, M., Hussain, S., & Fayaz Ahmed, S. (2015). Factors Determining Foreign Direct Investment in China. In *Research Journal of Finance and Accounting www.iiste.org ISSN* (Vol. 6, Issue 11). Online. www.iiste.org

Zalata, A. M., Ntim, C. G., Alsohagy, M. H., & Malagila, J. (2022). Gender diversity and earnings management: the case of female directors with financial background. *Review of Quantitative Finance and Accounting*, *58*(1), 101–136. https://doi.org/10.1007/s11156-021-00991-4

Zhao, X. (2022). Customer Orientation: A Literature Review Based on Bibliometric Analysis. *SAGE Open*, *12*(1), 215824402210798. https://doi.org/10.1177/21582440221079804